The Relationship between Empathy and Personality in Undergraduate Students’ Attitudes toward Nonhuman Animals

Ann C. Eckardt Erlanger* and Sergei V. Tsytsarev**
* Hofstra University and New York University
ann.erlanger@nyu.edu
** Hofstra University

Abstract
The majority of research investigating beliefs toward nonhuman animals has focused on vivisection or utilized populations with clear views on animal issues (e.g., animal rights activists). Minimal research has been conducted on what personality factors influence a nonclinical or nonadjudicated population’s beliefs about the treatment of animals. The purpose of the present study was to examine the role of empathy and personality traits in attitudes about the treatment of animals in 241 undergraduate students. Results indicated that those with high levels of empathy held more positive attitudes toward animals and more negative beliefs about animal cruelty than those with low levels of empathy. Some differences in participants’ specific attitudes toward animals were found. Limitations and implications for future research are reviewed.

Keywords
ATTAS, attitudes toward animals, empathy, IPIP

Introduction
Relationships between humans and nonhuman animals are complex. Knowledge of the factors influencing attitudes toward animals has implications for prevention and intervention in cases of cruelty. A small number of researchers have investigated the motivation behind animal cruelty (Hensley & Tallichet, 2005). Hensley and Tallichet (2008) surveyed 261 inmates who indicated why they hurt or killed animals. Of the 112 inmates who engaged in cruelty, the following reasons were reported: anger (48%), fun (38%), disliking the animal (22%), and imitating observed cruelty (15%). The highest predictor of interpersonal violence was “fun” as a motivation.

Hills (1993) created a tripartite model, arguing that value-expressive (human dominance), identification (emotional response), and instrumental...
motivations (use of animals for human purposes) form attitudes toward animals. Hills found that activists had increased empathy, belief in equality between humans and animals, and did not support use of animals. Farmers supported human dominance. Urban community dwellers had mixed results, reporting moderate levels of empathy and use of animals with neutral thoughts regarding human dominance.

Agnew (1998) produced a social psychological model of animal abuse. While recognizing that no integrated theory had been established, he distinguished four subjects of focus: “attitudes toward animals . . . attitudes and characteristics of . . . the animal right/welfare movement . . . attitudes, behavior, culture and organization of people involved in animal abuse . . . and the relationship between animal abuse and crime against humans” (p. 181). He proposed that criminologists employ a liberal definition of animal cruelty and look beyond the law to include noncriminal acts. He hypothesized that animal cruelty results from a culmination of the following: the animal, a person’s social position, individual traits, socialization, stress and social control, ignorance about cruelty, beliefs, and the perceived risk/benefit ratio. While individual traits are recognized in this model, Agnew does not offer the necessary depth of analysis of these complex concepts. The point to glean from this descriptive model is that beliefs and personality are central in conceptualizing those who commit or condone animal cruelty.

The Role of Empathy in Beliefs toward Nonhuman animals

Empathy is a multidimensional construct composed of cognitive and emotional components. Generally, empathy “refers to the reactions of one individual to the observed experiences of another” (Davis, 1983, p. 113). The cognitive aspects involve the ability to see events from another’s perspective. The emotional element is defined by reactivity (Davis, 1980). Taylor and Signal (2005) emphasize the importance of empathy and human-animal relations. In their sample of undergraduates, they found significant, moderate correlation between empathy and attitudes toward animals as measured by the animal Attitude Scale (AAS; Herzog, Betchart, & Pittman, 1991).

Signal and Taylor (2007) also compared levels of human-directed empathy and attitudes toward animals in two samples: general community members and animal protection workers. The latter felt more human-directed empathy and held more positive attitudes about animals than the general community.

Pagani, Robustelli, and Ascione (2007) sampled young people using a self-report questionnaire. There was a significant correlation between pet attachment and empathy toward animals (specifically, beliefs about road kill, hunting, fur and leather clothing, and zoos). The keeping of pets was related
to empathic feelings for animals used in the fur and leather industry and in zoos. Overall, participants who never engaged in animal abuse had more empathy for animals.

**Personality Factors Influencing Attitudes and Beliefs about Nonhuman animals**

A popular framework for defining personality is the Five Factor Model (FFM; Engler, 2003). The five factors are neuroticism, extraversion, openness, agreeableness, and conscientiousness. The revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992) is an objective measure that measures these five constructs. Neuroticism is a person’s susceptibility to psychological problems. Extraversion is sociability. Openness to experience is appreciation of emotions. Agreeableness is the ability to be sympathetic. Conscientiousness is regulation.

Personality as an influence on attitudes toward animals and beliefs has been investigated, although published, peer-reviewed, quantitative research is scarce. The present author performed a PsycINFO database search for peer-reviewed articles and the search terms “personality traits,” “animal,” and “attitudes.” The search yielded 73 articles. Only several were quantitative studies utilizing statistically sound measures that were relevant to the present study.

Broida, Tingley, Kimball, & Miele (1993) examined whether different opinions in the animal rights debate are influenced by personality. The researchers used the Myers-Briggs Type Inventory (Devito, 1985) and the animal Research Survey (Takooshian, 1988) in a sample of college students. Those supporting animal research were more likely to be male, conservative, masculine, and less empathetic when compared to participants who were against animal research. In addition, animal rights advocates also endorsed vegetarianism. Those with a higher frequency of being exposed to animal research as part of their major (i.e., psychology and biology) were less likely to support the work than other students. Intuitive and feeling types were more likely to oppose animal research when compared to sensate and thinking types. Extraverted-intuitive and extraverted-feeling types were more likely to contest animal research than extraverted-sensate types and extraverted-thinking types.

Matthews and Herzog (1997) had undergraduate students complete the Sixteen Personality Factor Questionnaire (16PF; Cattell, Eber, & Tatsuoka, 1970) and the animal Attitude Scale (AAS; Herzog et al., 1991) and analyzed how personality influenced attitudes toward animals. The personality scales and attitudes toward animals yielded weak correlations. The personality factors sensitivity and imaginativeness significantly correlated with attitudes toward animals, but most of the variance was accounted for by gender. In their
conclusion, the authors clearly stated that additional quantitative study is required in the area of personality and attitudes toward animals.

Specific knowledge about what traits influence attitudes and beliefs about animals guides prevention, assessment, and intervention in animal issues. From a review of the literature, it can be ascertained that the data are mixed on what individual factors shape these positions.

Hypotheses

It was hypothesized that:

1. participants scoring high on empathy would have more positive views of animals than participants scoring low on empathy;
2. participants scoring high on neuroticism would have less positive views of animals than those scoring low on neuroticism;
3. participants scoring high on openness to experience would have more positive views of animals than participants scoring low on openness to experience;
4. participants scoring high on agreeableness would have more positive views of animals than participants scoring low on agreeableness;
5. participants scoring high on conscientiousness would have more positive views of animals than participants scoring low on conscientiousness;
6. participants scoring high on extraversion would have more positive views of animals than participants scoring low on extraversion.

Method

Participants

Participants were 241 undergraduate students from two private institutions who took part for credit. This yielded a sufficient sample size (128) to increase power (Cohen, 1992). Approximately 74.7% were female ($n = 180$), and 25.3% were male ($n = 61$). The range in age was 18 to 46 years ($M = 20.40$ years, $SD = 3.76$), and the majority were Caucasian, 81.70% ($n = 197$).

Measures

Empathy. To measure empathy, participants were given the 26-item Interpersonal Reactivity Index (IRI; Davis, 1980). The IRI is a highly utilized and wide-ranging measure of empathy, with good reliability and validity (Henry,
The IRI has four scales: Perspective-Taking (PT; ability toassume another’s outlook), Fantasy (FS; connection with fictional characters), Empathic Concern (EC; compassion for others), and Personal Distress (PD; uneasiness when viewing another person in trouble). The current study resulted in Cronbach’s alphas ranging from .78 to .82 (PT, \( \alpha = .81 \); FS, \( \alpha = .82 \); EC, \( \alpha = .78 \); PD, \( \alpha = .80 \)) with an overall \( \alpha = .82 \). In earlier work with the IRI, percentile cut-offs were used to determine high and low scores (B. Henry, personal communication, May 26, 2009).

**Personality—Five Factors.** The 50-item International Personality Item Pool (IPIP; Goldberg, 1999) was given to assess factors of personality as determined by the revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992). These factors are neuroticism (\( \alpha = .86 \)), extraversion (\( \alpha = .86 \)), openness to experience (\( \alpha = .82 \)), agreeableness (\( \alpha = .77 \)), and conscientiousness (\( \alpha = .81 \)); (International Personality Item Pool, 2001). The NEO-PI-R domains correlate with the IPIP scales (range .85 to .92) (International Personality Item Pool, 2001). The IPIP is a public-domain measure available for free use by researchers. In the present study, the following Cronbach’s alphas were calculated: neuroticism \( \alpha = .82 \), extraversion \( \alpha = .85 \), openness to experience \( \alpha = .78 \), agreeableness \( \alpha = .74 \), and conscientiousness \( \alpha = .81 \).

**Attitudes about Nonhuman animal Treatment.** To assess attitudes toward cruelty, the Attitudes toward the Treatment of animals Scale (ATTAS; Henry, 2004) was included. The ATTAS is made up of 26 items asking participants to think about scenarios involving animals and has demonstrated good internal consistency (Henry, 2004). Each prompt begins, “How much would it bother you to think about . . . ,” and participants rate their response on a 5-point Likert scale. The current sample resulted in an alpha of .95. In a later study (Henry, 2006), the ATTAS was broken down into three factors; cruelty (Cronbach’s \( \alpha = .87 \)), utilitarian (Cronbach’s \( \alpha = .87 \)), and caregiving (Cronbach’s \( \alpha = .81 \)). The present study yielded similar alphas: (cruelty, \( \alpha = .90 \); utilitarian, \( \alpha = .89 \); and caregiving, \( \alpha = .89 \)). The cruelty factor measures reaction to those who hurt animals without cause, the utilitarian factor assesses beliefs regarding use of animals for purposes such as food or research, and the caregiving factor evaluates attitudes toward ensuring animal safety (Henry, 2006). The ATTAS and IRI (Davis, 1980) also correlate with each other (Henry, 2006).

**Human-Nonhuman animal Interactions**

**Animal experiences.** Sections of the Boat Inventory of animal-Related Experiences (BIARE; Boat, 1999) regarding a variety of animal interactions were collected for exploratory analyses (i.e., ownership, support, loss, cruelty or
killing, coercion or control). These sections contain 14 items, each with subsections. Modifications include removal of insects, which was considered a possible confound, as it was placed with “turtles, snakes, lizards, etc.” This was discussed with the author (B. Boat, personal communication, January 12, 2009). In addition, a section on sexual activity with animals was removed in accordance with previous research (Henry, 2004).

Aggression toward Nonhuman animals. The Aggression toward animals Scale (ATAS; Gupta & Beach, 2001) identifies the occurrence of animal abuse in adults, and has good internal consistency (Gupta, 2003, 2008). The current study yielded an alpha of .88.

Social Desirability. The Marlowe-Crowne Social Desirability Scale (M-C SDS; Crowne & Marlowe, 1960) was utilized to assess response style through 33 true/false items. It has demonstrated good internal reliability and test-retest reliability (Crowne & Marlowe, 1960). It was determined that responses were not excessively socially desirable in this study.

Procedure

Participants were presented with informed consent and the above measures through an Internet survey platform. The program was designed so participants were not forced to answer any particular question to move ahead in the survey. Participants were given the contact information for the campus counseling center at the conclusion of the study.

Results

The purpose of the present study was to examine the relationship among empathy and personality on attitudes toward animals. First, a series of independent-samples t-tests were carried out. To perform these analyses, the predictor variables empathy (overall and subscales) and each personality characteristic were recoded into high and low categories. Empathy was categorized using a percentile cutoff (below the 25th percentile was considered low; above the 75th percentile was considered high), and personality characteristics were recoded using a median split. Please see Table 1. Attitudes toward animals (general and specific) served as the criterion variables. Second, correlations were performed on the data to further investigate the hypotheses. Additional post-hoc analyses were performed on the data after the hypotheses were investigated.
Table 1. Empathy and Personality High and Low Score Ranges

<table>
<thead>
<tr>
<th></th>
<th>High scores</th>
<th>Low scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRIa</td>
<td>3.63-5.00</td>
<td>1.00-3.00</td>
</tr>
<tr>
<td>ECc</td>
<td>4.29-5.00</td>
<td>1.00-3.29</td>
</tr>
<tr>
<td>FSd</td>
<td>3.86-5.00</td>
<td>1.00-2.71</td>
</tr>
<tr>
<td>PDf</td>
<td>3.32-5.00</td>
<td>1.00-2.43</td>
</tr>
<tr>
<td>PTf</td>
<td>3.64-5.00</td>
<td>1.00-2.86</td>
</tr>
<tr>
<td>IPIPb</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Ng</td>
<td>2.50-5.00</td>
<td>1.00-2.49</td>
</tr>
<tr>
<td>Ohe</td>
<td>4.00-5.00</td>
<td>1.00-3.99</td>
</tr>
<tr>
<td>Aib</td>
<td>4.00-5.00</td>
<td>1.00-3.99</td>
</tr>
<tr>
<td>Cj</td>
<td>4.00-5.00</td>
<td>1.00-3.99</td>
</tr>
<tr>
<td>Ek</td>
<td>3.50-5.00</td>
<td>1.00-3.49</td>
</tr>
</tbody>
</table>

Note: IRI scores fall on a 5-point scale, with higher scores indicating higher levels of empathy. IPIP scores fall on a 5-point scale, with higher scores indicating higher levels of each personality characteristic. *IRI = Interpersonal Reactivity Index. *IPIP = International Personality Item Pool. *EC = empathic concern. *FS = fantasy. *PD = personal distress. *PT = perspective taking. *N = neuroticism. *O = openness to experience. *A = agreeableness. *C = conscientiousness. *E = extraversion.

* $p < .05$. ** $p < .01$.

**Human-Nonhuman animal Interactions**

Most of the sample, 93.8% ($n = 226$) reported keeping a pet in the past, and 73% ($n = 176$) currently had a pet. Approximately 75.9% ($n = 183$) indicated that a pet or animal was a source of comfort at one point during their lives. About 14.5% ($n = 35$) reported witnessing animal cruelty. Of this group, 25.7% ($n = 9$) saw the act committed by a family member or relative, 25.7% ($n = 9$) by a stranger, and 25.7% ($n = 9$) saw an “other” harm an animal. The majority of these participants, 38.7% ($n = 14$), witnessed a dog being injured, followed by 3.3% ($n = 8$) observing multiple animals being injured. Forty-four percent saw the animal be harmed in multiple ways ($n = 15$). Twenty-five percent ($n = 59$) of participants reported seeing another person give an animal drugs (e.g., alcohol, pot, etc). Three percent of the sample ($n = 7$) reported giving an animal drugs themselves. Acts of aggression toward animals were also assessed. Over 95% of the sample denied harming an animal by dropping it from a height ($n = 225$), hitting with a fist ($n = 228$), hitting with an object that could hurt ($n = 220$), depriving of necessary food, water, or medical attention ($n = 233$), or burning/scalding ($n = 230$). Only one participant endorsed the
question, “Have you ever deliberately hurt, tortured or killed a pet or animal in a cruel way?” and reported harming a dog by hitting, beating, or kicking.

Those scoring high on empathy ($M = 4.24, SD = .67, n = 56$) had more positive views of animals than those scoring low on empathy ($M = 3.76, SD = .87, n = 34$), $t(88) = -2.91, p < .01$. In addition, those scoring high on empathy ($M = 4.58, SD = .69, n = 56$) had higher levels of discomfort regarding animal cruelty than those scoring low on empathy ($M = 4.09, SD = .90, n = 34$), $t(88) = -2.88, p < .01$, and those scoring high on empathy ($M = 3.48, SD = .89, n = 56$), experienced greater levels of discomfort regarding utilitarian uses of animals than those scoring low on empathy ($M = 2.91, SD = 1.08, n = 34$), $t(88) = -2.68, p < .01$. Those high on personal distress had more negative views of cruelty and poor caretaking of animals than those scoring low on personal distress. Please see Table 2.

### Empathy, Personality and Attitudes toward Nonhuman animals

Empathy ($M = 3.30, SD = .45, n = 240$) was significantly correlated with attitudes toward animals ($M = 4.08, SD = .07, n = 236$), $r(233) = .24, p < .01$. There were also significant subscale correlations among empathy and attitudes toward animals. High scores on empathic concern, personal distress and perspective taking correlated with discomfort regarding animal cruelty. High scores on empathic concern and personal distress correlated with finding utilitarian uses of animals and animal neglect upsetting. Please see Table 3.

### Table 2. Attitudes toward Nonhuman Animals for High and Low Scorers on Personal Distress

<table>
<thead>
<tr>
<th></th>
<th>High PD$^a$</th>
<th></th>
<th>Low PD$^a$</th>
<th></th>
<th>df</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATTAS$^b$</td>
<td>4.25</td>
<td>.48</td>
<td>3.98</td>
<td>.73</td>
<td>.09</td>
<td>-1.73</td>
</tr>
<tr>
<td>CR$^c$</td>
<td>4.65</td>
<td>.35</td>
<td>4.39</td>
<td>.77</td>
<td>77.05</td>
<td>-2.58*</td>
</tr>
<tr>
<td>UT$^d$</td>
<td>3.38</td>
<td>.94</td>
<td>3.10</td>
<td>.95</td>
<td>135.00</td>
<td>-1.27</td>
</tr>
<tr>
<td>CG$^e$</td>
<td>4.74</td>
<td>.37</td>
<td>4.45</td>
<td>.75</td>
<td>69.17</td>
<td>-2.80**</td>
</tr>
</tbody>
</table>

Note: ATTAS scores range from 1-5, with higher scores indicating higher discomfort when thinking about nonhuman animals being harmed, neglected, or used for human purposes. Personal distress is a subscale of the Interpersonal Reactivity Index. Scores fall on a 5-point scale, with higher scores indicating increased feelings of individual anxiety when viewing others in trouble. $^a$PD = personal distress. $^b$ATTAS = Attitudes toward the Treatment of Nonhuman animals Scale. $^c$CR = cruelty. $^d$UT = utilitarian. $^e$CG = caregiving.

* $p < .05$. ** $p < .01$. 
Table 3. Correlations among Attitudes toward Nonhuman Animals and Empathy Subscales

<table>
<thead>
<tr>
<th>ATTASa</th>
<th>IRIb</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTd</td>
<td>CRc</td>
</tr>
<tr>
<td></td>
<td>.58**</td>
</tr>
<tr>
<td>CGe</td>
<td>.83**</td>
</tr>
<tr>
<td>ECf</td>
<td>.32**</td>
</tr>
<tr>
<td>FSg</td>
<td>.04</td>
</tr>
<tr>
<td>PDh</td>
<td>.16*</td>
</tr>
<tr>
<td>PTi</td>
<td>.16*</td>
</tr>
<tr>
<td>UTd</td>
<td>.54**</td>
</tr>
<tr>
<td>CGe</td>
<td>.26**</td>
</tr>
<tr>
<td>ECf</td>
<td>.28**</td>
</tr>
<tr>
<td>FSg</td>
<td>.12</td>
</tr>
<tr>
<td>PDh</td>
<td></td>
</tr>
<tr>
<td>PTi</td>
<td></td>
</tr>
</tbody>
</table>

Note: ATTAS scores range from 1-5, with higher scores indicating higher discomfort when thinking about nonhuman animals being harmed, neglected, or used for human purposes. IRI scores fall on a 5-point scale, with higher scores indicating high empathy. aATTAS = Attitudes toward the Treatment of animals Scale. bIRI = Interpersonal Reactivity Index. cCR = cruelty. dUT = utilitarian. eCG = caregiving. fEC = empathic concern. gFS = fantasy. hPD = personal distress. iPT = perspective taking.

* p < .05. ** p < .01.

Those scoring high on neuroticism (M = 4.12, SD = .61, n = 126) did not have less positive views of animals than those scoring low on neuroticism (M = 4.04, SD = .77, n = 109), t(204.72) = −.82, p = .41. Neuroticism (M = 2.66, SD = .68, n = 237) was not related to overall attitudes toward animals (M = 4.08, SD = .69, n = 237), r(204.72) = −.82, p = .41, or specific attitudes toward animals. Please see Table 4.

Those scoring high on openness to experience (M = 4.11, SD = .63, n = 137) did not have more positive general views of animals than participants scoring low on openness to experience (M = 4.04, SD = .76, n = 98), t(182.78) = −.75, p = .46. Those scoring high on openness to experience (M = 4.52, SD = .68, n = 137) reported more discomfort regarding animal cruelty than those scoring low on openness to experience (M = 4.33, SD = .75, n = 98), t(233) = −2.03, p = .04. The correlation of openness to experience (M = 3.61, SD = .69, n = 237) and utilitarian attitudes (M = 3.27, SD = .95, n = 237) was significant r(233) = .17, p = .01. This was not found in the other attitudes toward animals subscales (Table 4).

Those scoring high on agreeableness (M = 4.14, SD = .65, n = 123) did not have more positive views of animals than participants scoring low on agreeableness (M = 4.02, SD = .72, n = 112), t(233) = −1.39, p = .17. Overall

attitudes toward animals (M = 4.08, SD = .69, n = 237) were significantly correlated with agreeableness (M = 3.65, SD = .52, n = 237), r(233) = .28, p < .01. Attitudes regarding animal cruelty, utilitarian use of animals, and caretaking of animals were also significantly correlated with agreeableness (Table 4).

Table 4. Correlations among Attitudes toward Nonhuman Animals and Personality Subscales

<table>
<thead>
<tr>
<th>Subscales IPIP</th>
<th>N&lt;sup&gt;c&lt;/sup&gt;</th>
<th>O&lt;sup&gt;d&lt;/sup&gt;</th>
<th>A&lt;sup&gt;e&lt;/sup&gt;</th>
<th>C&lt;sup&gt;f&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cruelty&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.03</td>
<td>-.03</td>
<td>.27**</td>
<td>.05</td>
</tr>
<tr>
<td>Utilitarian&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.09</td>
<td>.17**</td>
<td>.21**</td>
<td>.02</td>
</tr>
<tr>
<td>Caregiving&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.06</td>
<td>.07</td>
<td>.25**</td>
<td>.11</td>
</tr>
<tr>
<td>N&lt;sup&gt;c&lt;/sup&gt;</td>
<td>–</td>
<td>.08</td>
<td>–.39**</td>
<td>–.31**</td>
</tr>
<tr>
<td>O&lt;sup&gt;d&lt;/sup&gt;</td>
<td>–</td>
<td>–</td>
<td>–.20**</td>
<td>–.09</td>
</tr>
<tr>
<td>A&lt;sup&gt;e&lt;/sup&gt;</td>
<td>–</td>
<td>–</td>
<td>.36**</td>
<td>–</td>
</tr>
</tbody>
</table>

Note: Attitudes toward the Treatment of animals Scale (ATTAS) scores range from 1-5, with higher scores indicating higher discomfort when thinking about nonhuman animals being harmed, neglected, or used for human purposes. IPIP scores fall on a 5-point scale, with higher scores indicating higher levels of each personality characteristic. IPIP = International Personality Item Pool. ATTAS subscale. *N = neuroticism. O = openness to experience. A = agreeableness. C = conscientiousness. *p < .05. **p < .01.

Participants scoring high on conscientiousness (M = 4.11, SD = .64, n = 142) did not have more positive views of animals than participants scoring low on conscientiousness (M = 4.04, SD = .76, n = 93), t(233) = -.82, p = .41. Conscientiousness (M = 3.66, SD = .54, n = 237) did not significantly correlate with general attitudes toward animals (M = 4.08, SD = .52, n = 237), r(233) = .07, p = .31, or specific attitudes toward animals (Table 4).

Participants scoring high on extraversion (M = 4.03, SD = .70, n = 123), did not have more positive views of animals than those scoring low on extraversion M = 4.15, SD = .67, n = 112), t(233) = 1.35, p = .18.

Post-Hoc Analyses

Further analyses were conducted using demographic characteristics in the areas of empathy, attitudes toward animals, and aggressive acts against ani-
Females had higher overall empathy than males: $t(238) = –6.29, p < .01$; fantasy $t(238) = –2.35, p = .02$; empathic concern $t(238) = –5.61, p < .01$; personal distress $t(238) = –6.32, p < .01$; and perspective taking $t(238) = –2.60, p = .01$. Females had more positive general attitudes toward animals $t(233) = –7.14, p < .01$, and were more bothered than males by cruelty $t(71.71) = –4.56, p < .01$; utilitarian uses $t(233) = –7.31, p < .01$; and poor caregiving $t(67.97) = –3.86, p < .01$. Please see Table 5.

Those who currently kept a pet were more likely to have more positive overall views toward animals ($M = 4.21, SD = .54, n = 175$) than those who did not currently keep a pet ($M = 3.71, SD = .90, n = 60$), $t(74.36)= 4.07, p < .01$, and more positive views regarding caregiving ($M = 4.63, SD = .49, n = 175$), than non-pet guardians($M = 4.22, SD = .98, n = 60$), $t(69.48)= 3.09, p < .01$. In addition, current pet guardians reported more discomfort in regard to cruelty ($M = 4.57, SD = .53, n = 175$) than those without pets ($M = 4.08, SD = 1.01, n = 60$), $t(70.44) = 3.61, p < .01$. Non-pet guardians were more

<table>
<thead>
<tr>
<th>Table 5. Attitudes toward Nonhuman Animals and Empathy Means and Standard Deviations by Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>ATTASa</td>
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<tr>
<td>CRc</td>
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<td>UTd</td>
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<td>PTi</td>
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</table>

Note: ATTAS scores range from 1-5, with higher scores indicating higher discomfort when thinking about nonhuman animals being harmed, neglected, or used for human purposes. IRI scores fall on a 5-point scale, with higher scores indicating increased empathy. ATTAS = Attitudes toward the Treatment of animals Scale. IRI = Interpersonal Reactivity Index. CR = cruelty. UT = utilitarian. CG = caregiving. EC = empathic concern. FS = fantasy. PD = personal distress. PT = perspective taking. *p<.05. **p<.01.
accepting of utilitarian uses of animals ($M = 2.84, SD = .99, n = 60$) than pet guardians ($M = 3.42, SD = .89, n = 175$), $t(233) = 4.20, p < .01$. Past pet guardianship was related to more positive views of caregiving toward animals ($M = 4.55, SD = .64, n = 224$) than not previously keeping a pet ($M = 4.01, SD = 1.11, n = 224$), $t(233) = 2.60, p = .01$.

**Discussion**

To date, there is little published research investigating attitudes toward animals among the population at large. In particular, there is a shortage of knowledge on empathy and personality factors in relation to attitudes toward animals or behaviors toward animals in the nonclinical and nonadjudicated populations. The purpose of the current study was to investigate the relationship between empathy and personality characteristics and attitudes toward animals.

**Empathy and Personality**

The results of the present study suggest that those with high levels of empathy had more positive views of animals than those with low levels of empathy. Furthermore, those with lower levels of empathy found animal cruelty and utilitarian uses of animals less distressing than those with higher levels of empathy. Empathy was significantly correlated with general and specific attitudes toward animals. In addition to overall scores, empathy subscales (empathic concern, personal distress, and perspective taking) were significantly correlated with negative attitudes toward animal cruelty. Empathic concern and personal distress significantly correlated with attitudes toward human uses of animals (utilitarian uses) and animal neglect (poor caregiving). Taylor and Signal (2005) also found a significant and moderate relationship between empathic concern and attitudes toward animals. The authors speculated that empathy plays a role and needs to be considered as a stand-alone construct, not part of general personality traits. They noted that primary prevention aimed at increasing animal welfare should attempt to create human-directed empathy. The current study supported a small but statistically significant relationship.

Lack of empathy is a feature of the DSM-IV-TR diagnosis antisocial personality disorder (American Psychiatric Association, 2000). Anecdotal evidence suggests that some murderers engage in acts of animal cruelty (Wright & Hensley, 2003). While these specific results are limited to attitudes and not behaviors, one can speculate that certain attitudes are related to behaviors. While possible, it is unlikely that individuals with low empathy who engage in animal cruelty would have positive views regarding animals.
Animal cruelty treatment methods are extremely limited. Two models, *AniCare* (Jory & Randour, 1999) and *AniCare Child* (Randour, Krinsk, & Wolf, 2002) are interventions focusing on increasing empathy and self-management. Additional research on how empathy impacts beliefs and attitudes about animals would potentially guide assessment and intervention.

The results of the present study indicate no difference in global attitudes toward animals as a function of personality traits of neuroticism, openness to experience, agreeableness, conscientiousness, and extraversion. (It is important to note that there was specific subscale correlational support for agreeableness.) Matthews and Herzog (1997) found similar results with a comparable sample. Arguably, the present study could be viewed as further support that personality traits do not have much influence on attitudes toward animals. Attitudes may function independently of certain constructs. Ultimately, variables other than broad personality traits may be better predictors of attitudes toward animals.

Furthermore, undergraduate students are frequently used in psychological research. This group shares some similarities with the general population; however, there are differences that could account for the lack of significant results or pose a potential threat to external validity. Peterson's (2001) meta-analysis found that undergraduate students give more homogeneous replies than nonstudents, and effect sizes between the two groups (in strength and direction) differed. Caution must be used when interpreting data derived from student samples.

Results indicated that participants with high levels of openness to experience were more likely to be against utilitarian uses of animals than participants with low levels of openness to experience. This means that those with a higher inner awareness, intellectual curiosity, and creative thinking opposed animal research, hunting, and training. Divergent thinking has been found to correlate with openness to experience (McCrae, 1987). It is possible that individuals who possess the ability to research alternative methods and enjoy intellectual pursuits may find the use of animals cognitively limiting and restricting. Alternative ways of achieving scientific goals may be more attractive for these individuals.

**Post-Hoc Analyses**

The results of the current study supported that females had higher global empathy than males. Females also had a stronger inclination to connect with fictional accounts, greater concern for others’ feelings of stress in emotional situations, and greater ability to see a situation from another’s viewpoint than males. According to Bem (1981), masculine and feminine roles in a society are
determined through sex typing, and gender-specific roles are learned. The child assimilates new ideas through a gender schema, or cognitive way of processing information using gender roles as a guide, and adults in a child’s life reinforce a child acting in accordance with gender-specific behaviors. It is possible that as adults people are not only acting as per the social roles assigned, but interpreting and integrating additional information (e.g., attitudes toward animals) through their gender schemas.

Overall, females had more positive attitudes toward animals than males. They were more distressed than males by animal cruelty, animal neglect, and utilitarian animal uses. Broida, Tingley, Kimball, and Miele (1993) found that those endorsing animal research were more likely to be male. The utilitarian construct in the present study encompasses use of animals, including animal research (Henry, 2004). As there are gender roles at play in empathy, this also appears to be true in attitudes toward animals. It may be that females generalize motherly and nurturing behavior with other species and situations in compliance with gender schemas (Bem, 1981). If females process new information through a gender schema, a nurturing situation (i.e., with an animal) is compared with another nurturing situation (i.e., mother with a child).

Pet guardianship influenced attitudes toward animals. Current pet guardians were different from non-pet guardians, as they held more positive views of animals overall and were more bothered by human uses of animals and animal cruelty. This was also found by Taylor and Signal (2005) in a sample of undergraduate students. Further, the results from the present study indicated that past pet guardians were more likely to be bothered by neglect than those who had not kept a pet. Allport (1957) posits that the more two different groups interact, prejudice decreases (contact theory). This has been successfully tested in many studies (see Pettigrew & Tropp, 2006). Human-animal interaction could increase positive attitudes toward animals. More recent contact (current guardianship) seemed to improve more attitudes than past contact (previous guardianship).

**Limitations of the Current Study**

Although the current study offered some support of the hypotheses, there were limitations. First, only one person admitted committing an act of cruelty toward animals. Henry (2004) reported that 17% of undergraduates had committed animal cruelty at least once, with 12% doing so multiple times. Baldry (2005) found that 40% of young students had engaged in animal abuse. While acts of aggression were analyzed for post-hoc investigation, this very low base rate limited additional research questions. Most of the sample
was homogeneous in its responses by denying acts of animal cruelty, resulting in a restricted range. As noted by Peterson (2001), this homogeneity in undergraduates can reduce the ability to find relationships among variables. An undergraduate sample, even with its limited external validity, can be viewed as a “normal” sample where animal cruelty is not as prevalent when compared to other samples (e.g., incarcerated individuals).

In addition, several researchers have conceptualized animal cruelty differently. Perhaps using another method in the current study would have resulted in more participants reporting personal acts of animal cruelty. An alternate explanation is that students in the current sample may not have disclosed acts of animal cruelty due to social desirability. Although the social desirability scale indicated that participants were generally truthful, some may have withheld this information. Animal cruelty is spotlighted frequently in the news, locally and nationally. In this sample’s community, an act of animal cruelty received significant coverage and community attention, while a man’s murder in the same wooded area was not paid much attention (Twarowski & Bolger, 2007). While data collection was occurring, stories of animal cruelty were the subject of national attention through media outlets (see American Society for the Prevention of Cruelty to Animals, 2009; Phillips, 2009).

Second, the sample lacked diversity, both in ethnicity and gender. The majority of participants were Caucasian females. The campuses were selected based on similarities to decrease threats to internal validity; however, this contributed to weak external validity.

Third, the measures were administered over an Internet survey platform. While this had benefits (privacy, comfort, unlimited accessibility), there are a few potential concerns. The measures could not be ordered in a random sequence; therefore, the questionnaires were not counterbalanced. Students may have been fatigued by the amount of time spent on the questionnaires and the potential upsetting nature of the questions asked regarding animal cruelty.

**Practical Implications**

Primary prevention and public awareness campaigns are best served when the population is known. While undergraduate students are not perfectly representative of the general population, gaining insight into their attitudes will help program development.

The hypothesis that garnered the most support was that those high in empathy would have more positive views of animals than those low in empathy. In an attempt to design better diagnostic and treatment tools, empathy must
continue to remain an essential component. Accurately assessing empathy and creating goals to increase empathy is fundamental to a successful instrument or intervention.

Exploratory analyses were conducted to see whether animal guardianship was related to attitudes toward animals. Current pet guardianship was correlated with positive views of animals in all areas. Those who had previously kept a pet were more likely to be upset by animal neglect. This provides clear direction for developing a program aimed at raising awareness of animals being harmed, neglected, or used for utilitarian purposes. Targeting individuals who keep pets may gain more support than soliciting those without pets.

**Implications for Future Research**

Human-animal studies is a newly developing field, with only about twenty years of organized quantitative research. The present study added to this knowledge base, while opening new avenues for future research that continue to examine the attitudes held by “typical” community members through psychometrically sound instruments. This will supplement the work with sub-populations that may not be comparable to the general population.

**Summary and Conclusion**

The field of human-animal studies has a wealth of literature focusing on acts of animal cruelty and attitudes held by those who interact with animals. Quantitative research regarding factors influencing attitudes toward animals is lacking. The goal of the present study was to examine the relationship among empathy, personality traits, and attitudes toward animals.

In conclusion, the results from the present study supported the hypothesis that those high in empathy would have more positive views of animals than those low in empathy. The results indicated little to no support for the hypotheses regarding personality traits and attitudes toward animals. The demographic information and results from the post-hoc analyses add to the knowledge base of attitudes toward animals in the nonclinical and nonadjudicated populations.

**Note**

1. This research was completed at Hofstra University as part of the first author’s doctoral dissertation, with the second author as dissertation sponsor.
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